CLAIMS

1. An acoustic wave device comprising a layer of ferroelectric material (C) and a substrate (S), characterized in that the layer of ferroelectric material lies between a first electrode (E_1) which is deposited on the surface of the substrate or is a constituent part of the substrate and a second electrode (E_2) and in that the layer of ferromagnetic material comprises positive first polarization domains (D_1) and negative second polarization domains (D_2).

2. The acoustic wave device as claimed in claim 1, characterized in that the second electrode is deposited on the surface of the layer of ferroelectric material.

3. The acoustic wave device as claimed in claim 1, characterized in that it includes a cover (CL) resting on the substrate, said cover having the second electrode, so as to create a space between said second electrode and the layer of ferroelectric material.

4. The surface wave device as claimed in claim 3, characterized in that the cover can be removed from the layer of ferroelectric material.

5. The acoustic wave device as claimed in one of claims 1 to 4, characterized in that it comprises unpolarized third domains (D_3) so as to influence the directivity of the acoustic waves.

6. The acoustic wave device as claimed in one of claims 1 to 5, characterized in that it comprises a series of linear domains having first domains and second domains.

7. The acoustic wave device as claimed in claim 6, characterized in that the series of linear domains furthermore includes unpolarized domains.

8. The acoustic wave device as claimed in one of claims 1 to 5, characterized in that it comprises a matrix arrangement of first domains and of second domains.

9. The acoustic wave device as claimed in claim 8, characterized in that it furthermore includes unpolarized domains.

10. The acoustic wave device as claimed in one of claims 1 to 9, characterized in that the ferroelectric material is lead titanium zirconium oxide.

11. The acoustic wave device as claimed in claim 10, characterized in that the first electrode is a platinum/titanium alloy.

12. The acoustic wave device as claimed in one of the preceding claims, characterized in that the substrate is made of silicon.

13. The acoustic wave device as claimed in one of the preceding claims, characterized in that the second electrode is made of aluminum.

14. The acoustic wave device as claimed in one of claims 10 to 13, characterized in that it comprises at least one electrode whose surface is defined by two parameters y and x satisfying an equation of the type $y = f(x)$ where f is a real function.

15. The acoustic wave device as claimed in one of claims 10 to 13, characterized in that the spatial

polarization distribution in the plane of the layer of ferroelectric material follows a geometrical law so that the resulting polarized surface is defined by two parameters y and x satisfying an equation of the type $y = f(x)$ where f being a real function.

16. A process for manufacturing a surface wave device as claimed in one of claims 1 to 15, characterized in that it comprises the following steps:
- production of a layer of ferroelectric material on the surface of a substrate having a first electrode;
- formation in the layer of ferroelectric material of positive and negative polarization domains by applying an electric field greater than the coercive field of the ferroelectric material, the polarity of which determines the direction of polarization of the domains; and
- production of a second electrode opposite the ferroelectric material.

17. The process for manufacturing an acoustic wave device as claimed in claim 16, characterized in that the second electrode is produced on the surface of the layer of ferroelectric material.

18. The process for manufacturing an acoustic wave device as claimed in claim 16, characterized in that the second electrode is supported by a cover fixed to the substrate.